Southern Appalachian Creature Feature Podcasts

Hemlock mortality

Greetings and welcome to the Southern Appalachian Creature Feature.

The death of hemlock trees from the hemlock woolly adelgid is an increasingly widespread and well-known phenomena, but what remains a mystery is exactly how this will impact the future of Southern Appalachian forests.

The movement of carbon through a natural community can have a profound affect on the type of plant community at a site. A team of researchers working at the Coweeta Hydrological Laboratory in Macon County, North Carolina looked at how carbon cycling is impacted by hemlock woolly adelgid infestations, comparing the decline of infested trees to girdled trees, or trees whose flow of nutrients and water had been cut off.

Trees are typically carbon sinks – storing carbon in their wood, roots and leaves. The thinking was that the hemlock woolly adelgid is a relatively slow killer and hemlock trees would gradually loose their ability to store carbon, and leaves and roots would gradually die and become part of the organic matter in the soil. What the researchers discovered was that adelgid-infested trees were surprisingly quick to lose needles, root mass and their ability to store carbon - basically declining at a rate similar to the girdled trees.

The upshot is that the hemlock woolly adelgid will likely be responsible for a quick and significant increase in forest carbon, knowledge that begins to give scientists an idea of how the plant community will develop as the hemlocks decline.

For WNCW and the U.S. Fish & Wildlife Service, this is Gary Peeples.